

## Cooperative Research and Development Agreement With CH2M Hill Southeast, Inc.

### *Packed Column Air Stripping*

#### Participants

This Cooperative Research and Development Agreement (CRADA) was an interactive effort involving engineers from the U.S. Environmental Protection Agency (EPA), Office of Water, Technical Support Division (TSD), and CH2M Hill.

#### Purpose

The primary purpose of this CRADA was to demonstrate the feasibility of removing trihalomethanes (THMs) from the finished drinking water at Englewood Water District (EWD), FL, via packed column air stripping. A secondary objective was to evaluate the formation and removal of other disinfection byproducts.

#### Background

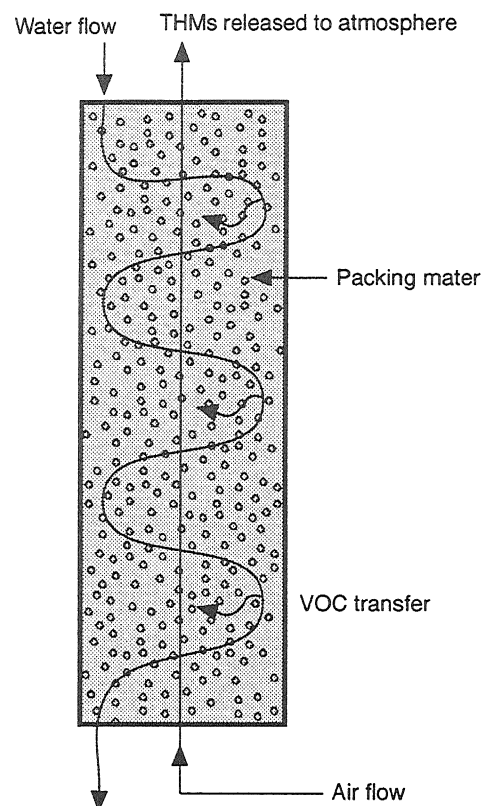
The EWD had been working with CH2M Hill in evaluating alternatives to reduce THM formation in its drinking water distribution system to comply with existing regulations. CH2M Hill had conducted an extensive review of treatment technology and approached EPA about implementing a pilot packed column air stripping field evaluation at Englewood to evaluate THM removal.

#### Procedure

The TSD pilot unit consists of a 24 ft tall, 2 ft diameter aluminum column packed with 18 ft of 1-in plastic packing material. Water is pumped to the top of the column where a liquid distributor disperses the water onto the packing material. Water cascades down through the packing material and is collected in an effluent tank at the bottom of the column. Air is then drawn into the bottom of the column, passed up through the packing material and discharged via a blower. This process effectively removes the THMs from the water and vents them into the atmosphere where they are dispersed by wind currents.

#### Results

The packed column air stripping unit proved extremely effective in removing THMs which had formed in the water supply. However, the detention time of the plant was not



*Packed column air stripping process*

sufficient to stabilize the formation of THMs and significant additional THMs formed after water was passed through the air stripping unit. As a result of information and data gathered under this CRADA, the packed column air stripping process could not be used to meet existing or future THM disinfection byproduct regulations.

#### Benefits to Government and Industry

Additional data on disinfection byproduct removal from packed column aeration were obtained and methods developed to use in the standardization of air stripping systems. The EWD and CH2M Hill benefited by obtaining the information and testing procedures they required in a quick and cost-effective manner.



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This is one of more than 50 cooperative research and development agreements EPA has with various U.S. businesses, academic institutions, and state and local governments under the Federal Technology Transfer Act of 1986. These agreements serve as a mechanism for the federal government to work with companies to develop new pollution prevention control technologies and efficiently bring them into the marketplace.

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